

FIGURES

For docket # pp-03-01-2003,

"METHOD AND SYSTEM FOR INTERACTIVE REGION SEGMENTATION"

FIGURE 1: COMPUTER SYSTEM

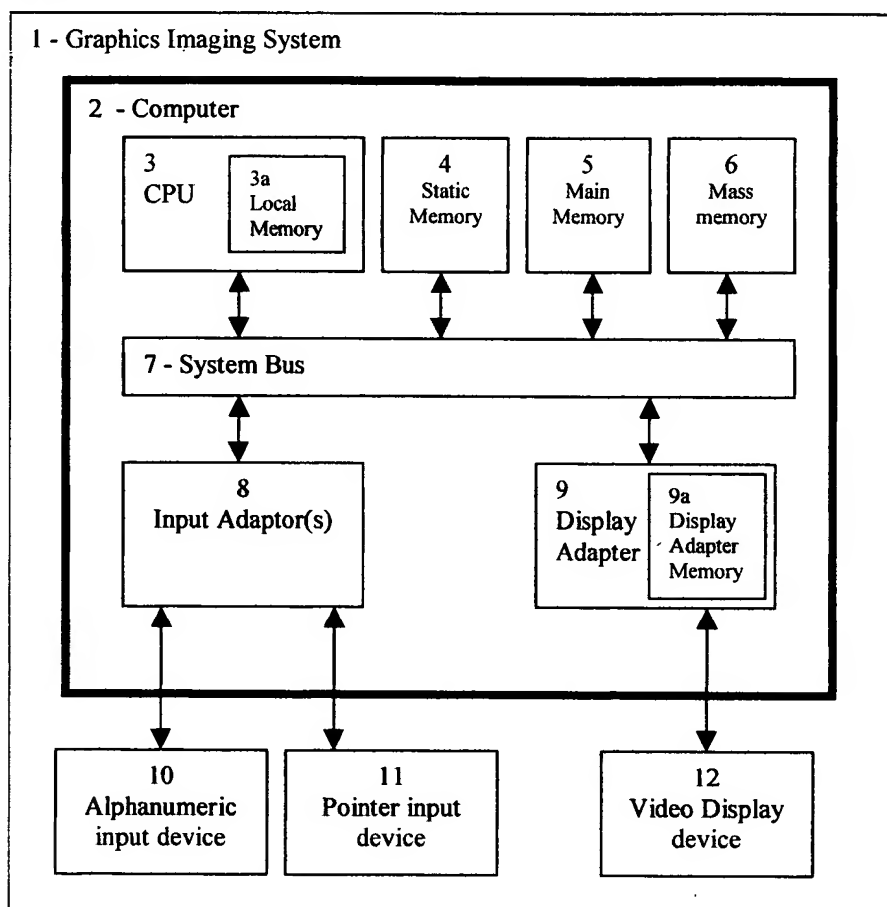


FIGURE 2: ABSTRACT COLLAGE

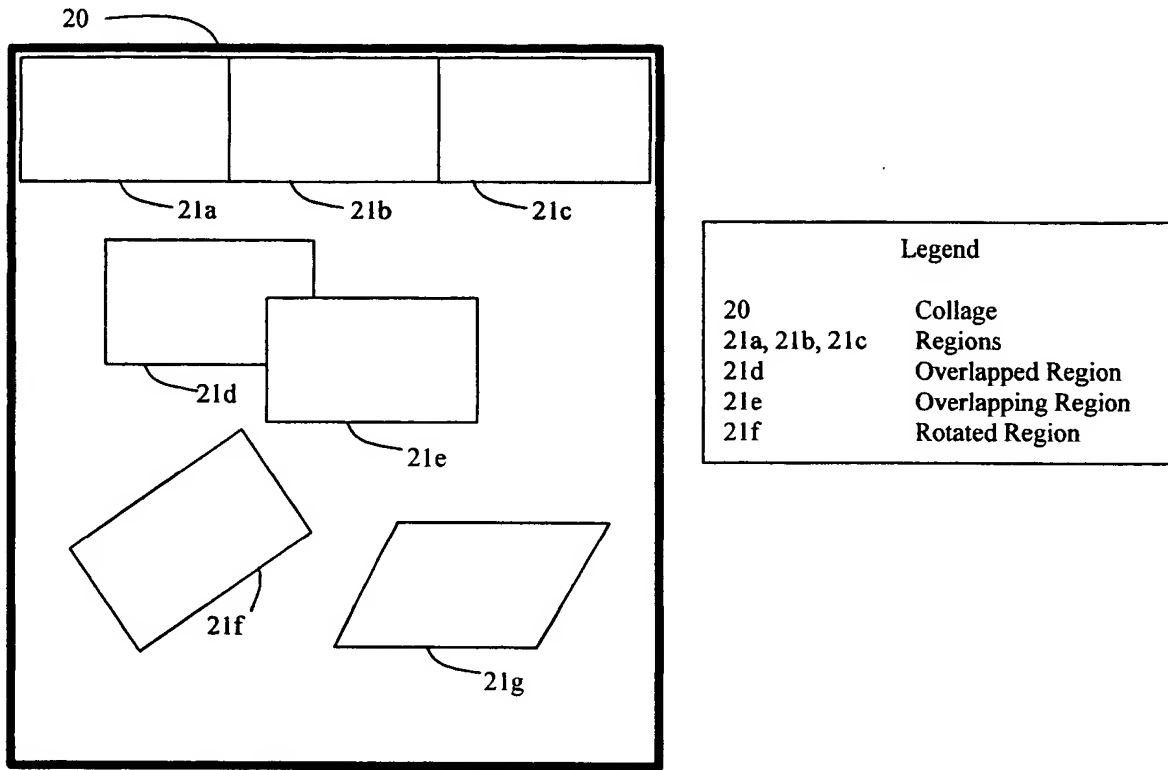


FIGURE 3: SIMPLE TILED COLLAGE

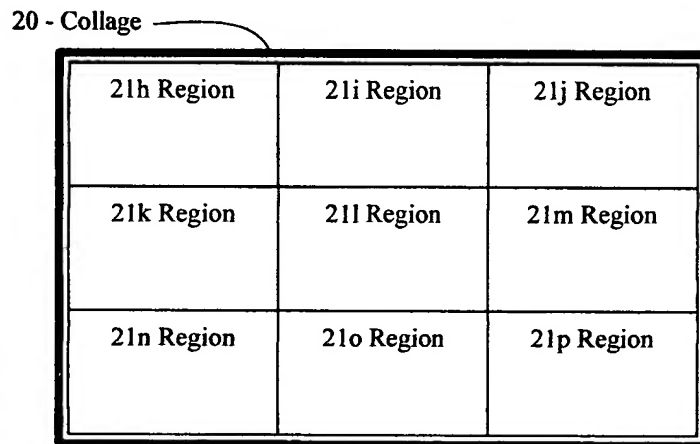


FIGURE 4: NON-GRID COLLAGE

20 - Collage

21q Region	21r Region	21s Region
21t Region		21u Region
21v Region	21w Region	
21x Region	21y Region	21z Region

FIGURE 5: REGIONS

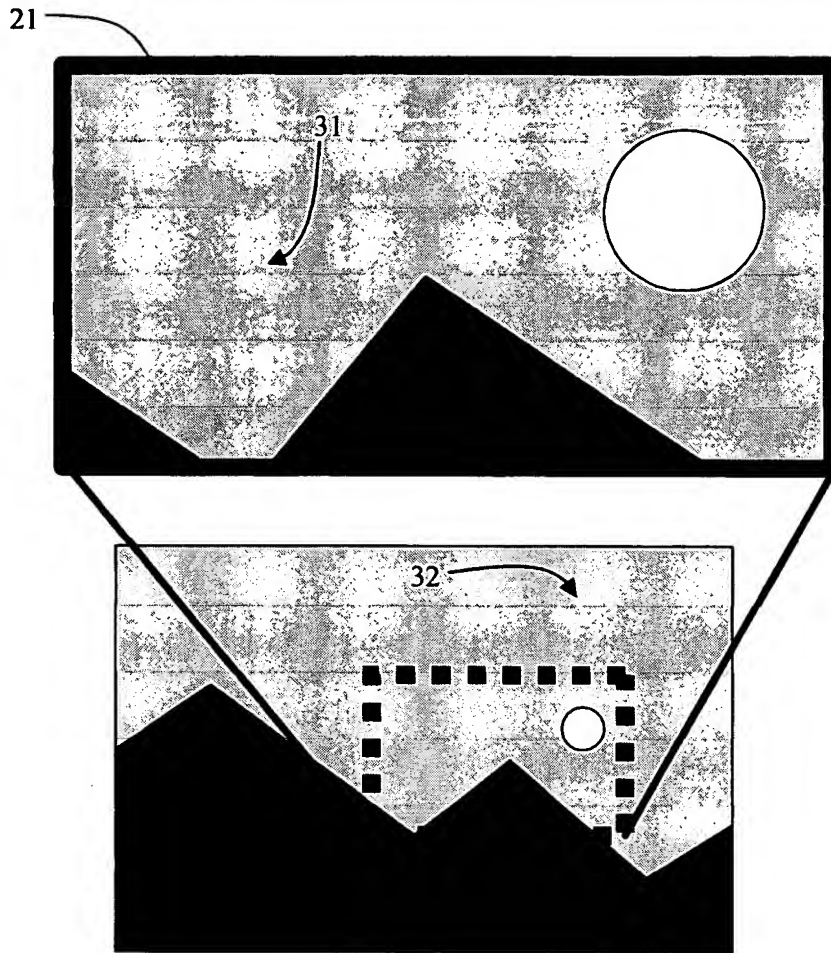
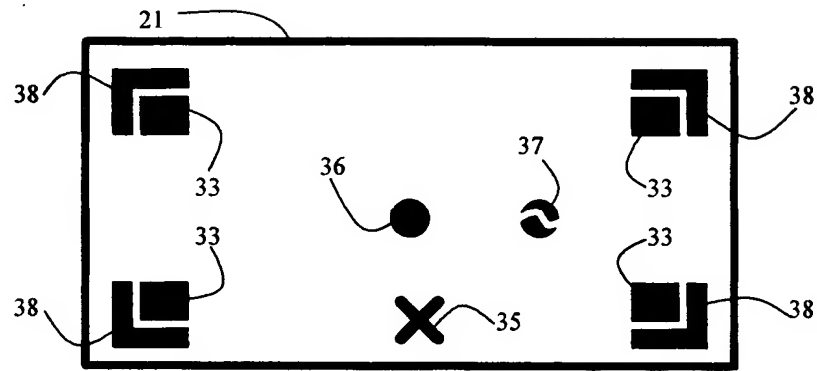


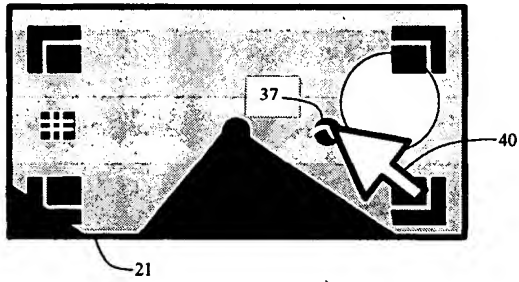
FIGURE 6: MANIPULATORS



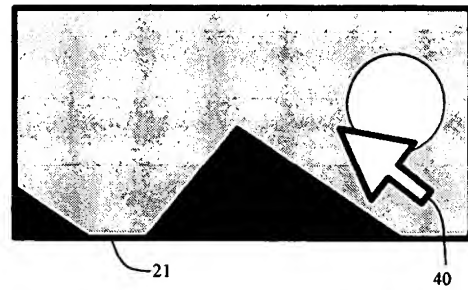
Legend	
21	Region
33	Crop Handle
35	Delete Handle
36	Pan Handle
37	Rotate Handle
38	Resize Handle

FIGURE 7: REGION ROTATION

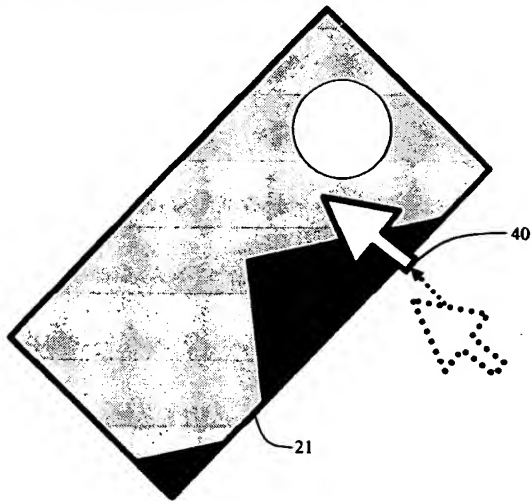
Step 0: the user brings the cursor 40 over the rotate handle 37 in the region 21



Step 1: the user presses the left mouse button



Step 2: the user drags the mouse while holding the button down



Step 3: the user releases the mouse button

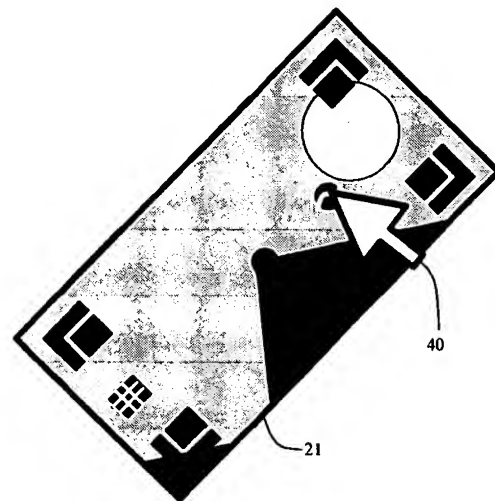
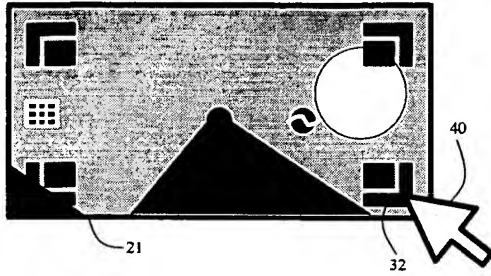
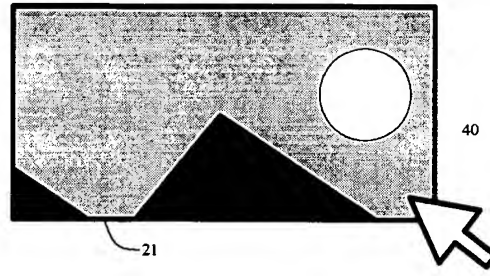


FIGURE 8: REGION RESIZING

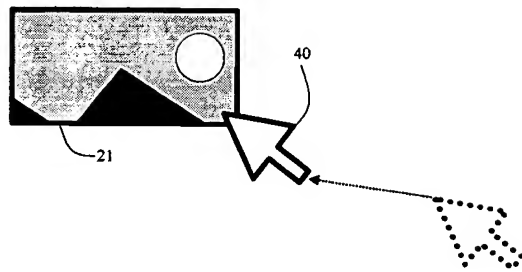
Step 0: the user brings the cursor 40 over a resize handle 32 on a region 21



Step 1: the user presses the left mouse button



Step 2: the user drags the mouse while holding the button down



Step 3: the user releases the mouse button
[The handles may be drawn at reduced size if necessary]

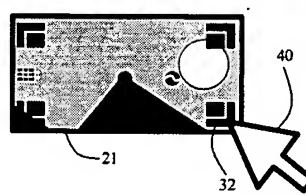
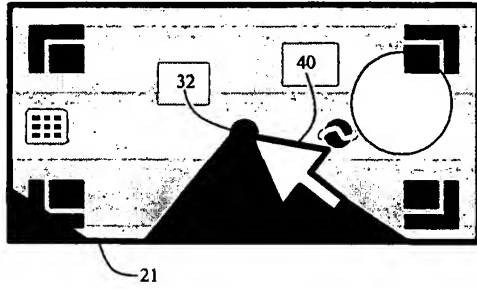
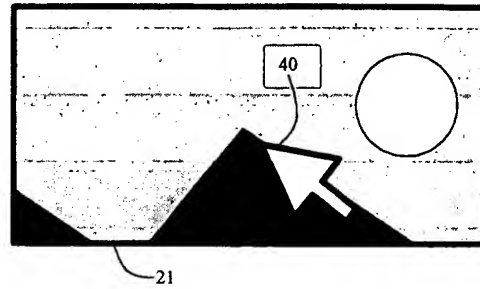


FIGURE 9: IMAGE PANNING

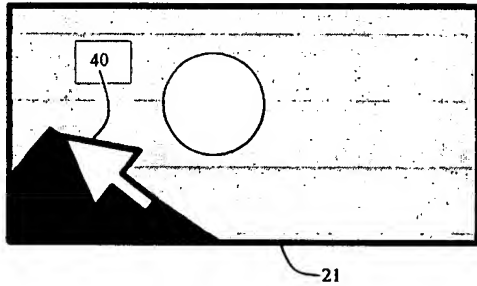
Step 0: the user brings the cursor 40 over the pan handle 36 for the region 21



Step 1: the user presses the left mouse button



Step 2: the user drags the mouse while holding the button down



Step 3: the user releases the mouse button

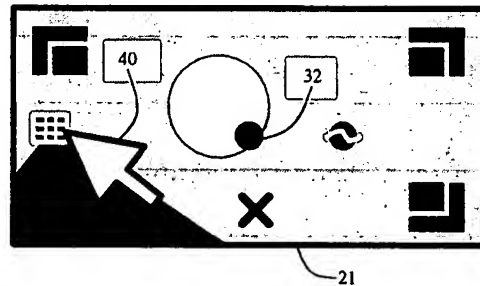
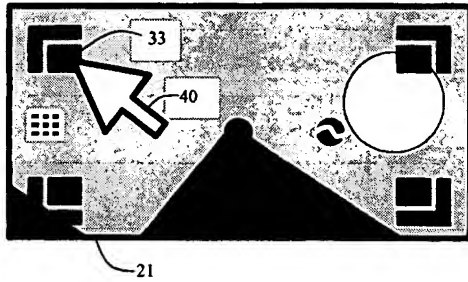
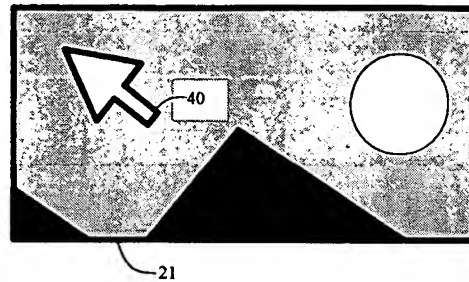


FIGURE 10: IMAGE CROPPING

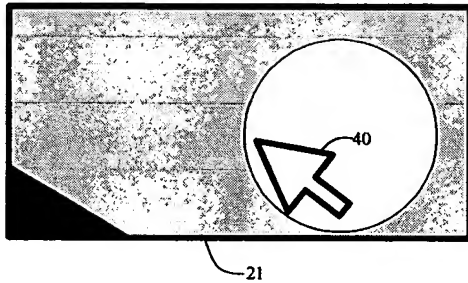
Step 0: the user brings the cursor 40 over a crop handle 33 in the region 21



Step 1: the user presses the left mouse button



Step 2: the user drags the mouse while holding the button down



Step 3: the user releases the mouse button

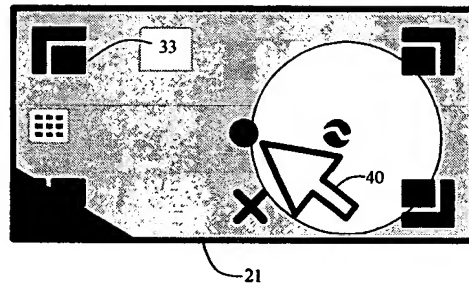
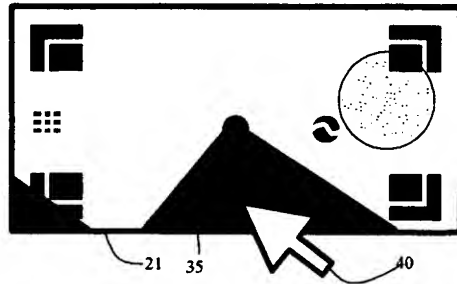


FIGURE 11: DELETING REGIONS

Step 0: the user brings the cursor 40 over the deletion handle 35 in the region 21

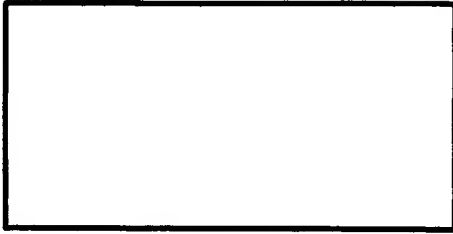


Step 1: the user presses the left mouse button



FIGURE 12: SIMPLE SEGMENTATION

Before: One contiguous region



After: A set of evenly sized regions taking the same space

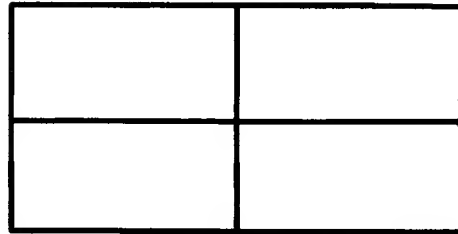
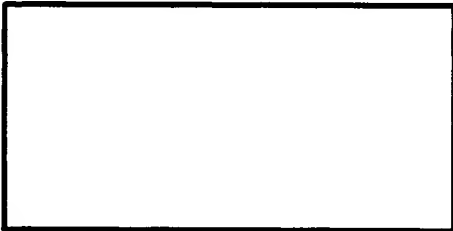
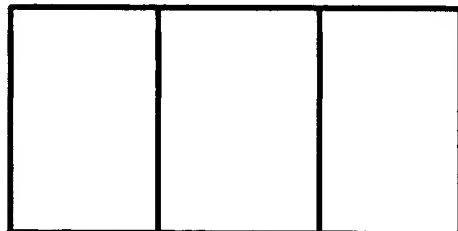


FIGURE 13: SEQUENTIAL SEGMENTATION

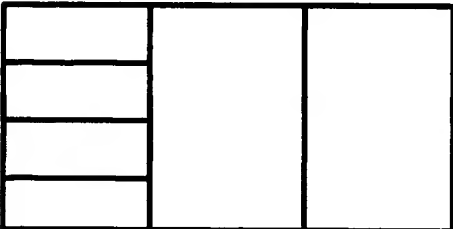
Before: A single region



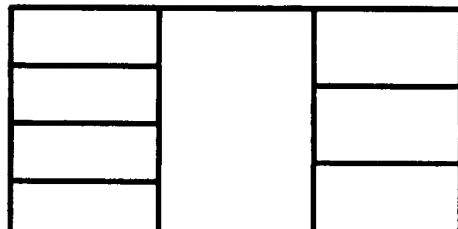
After one segmentation operation:



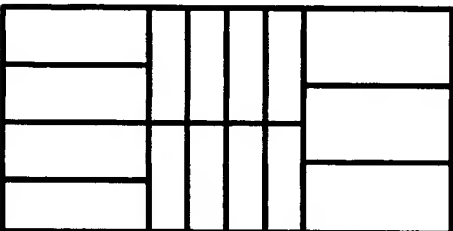
After two segmentation operations:



After three segmentation operations:



After four segmentation operations:



After five segmentation operations:

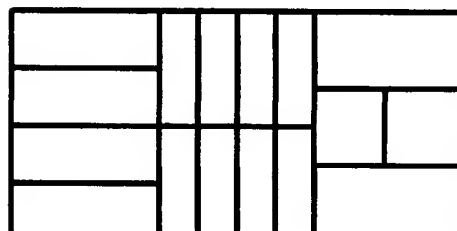
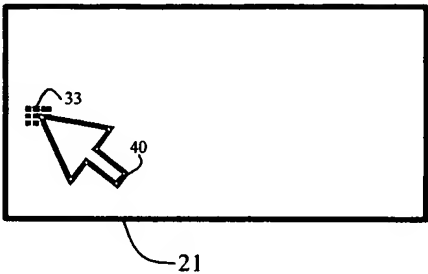
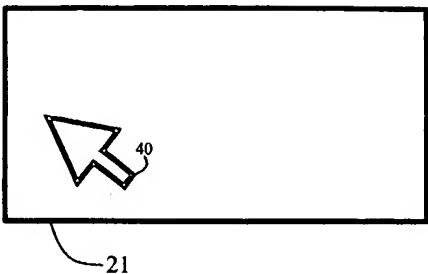


FIGURE 14: IMAGE SEGMENTATION USING A MOUSE

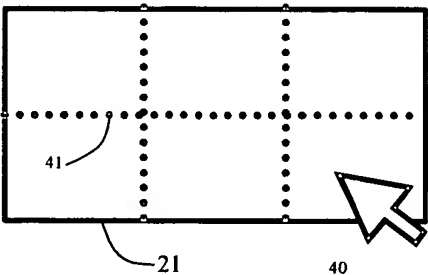
Step 0: the user brings the cursor 40 over the split handle 33 in the region 21 (other handles not drawn for clarity)



Step 1: the user presses the left mouse button



Step 2: the user drags the mouse while holding the button down. Temporary split indications 41 are overlaid over the region 21



Step 3: the user releases the mouse button, producing a set of regions 21a, 21b, 21c, 21d, 21e, 21f

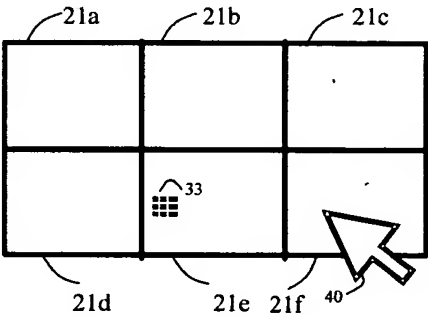
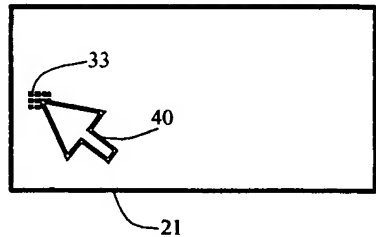
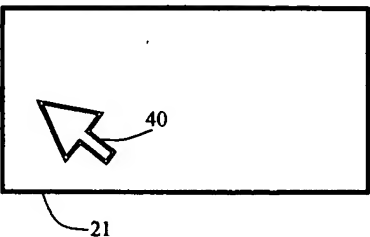


FIGURE 15: GRID OVERLAYS

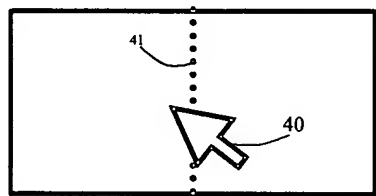
Step 0: the user brings the cursor 40 over the split handle 33 for a region 21



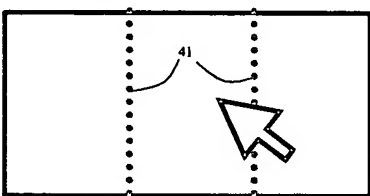
Step 1: the user presses the left mouse button



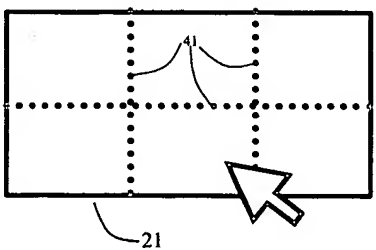
Step 2: the user drags the mouse to the right while holding the button down, producing temporary split indications 41



Step 3: the user continues to drag the mouse to the right



Step 4: the user continues to drag the mouse, changing direction and moving down:



Step 5: the user releases the mouse button. The region 21 is split into new regions 21a, 21b, 21c, 21d, 21e, 21f.

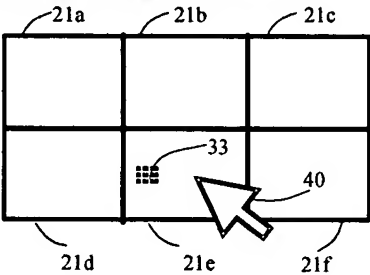
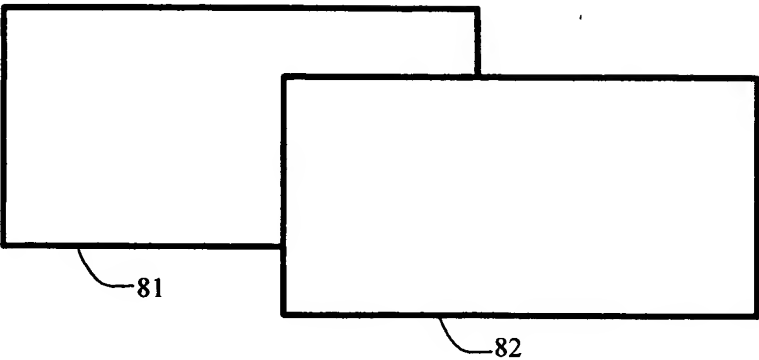
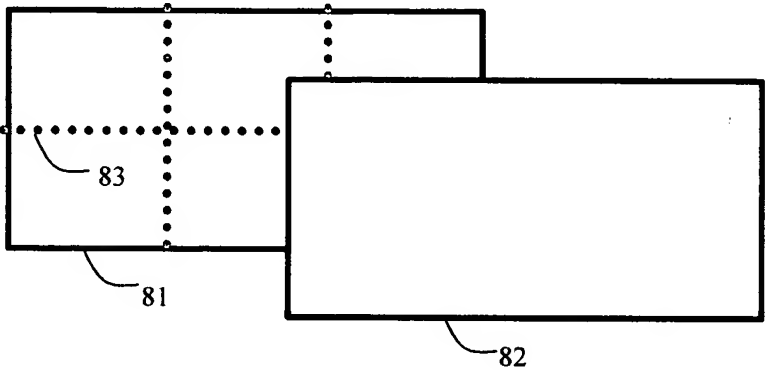


FIGURE 16: SPLITTING OVERLAPPING REGIONS

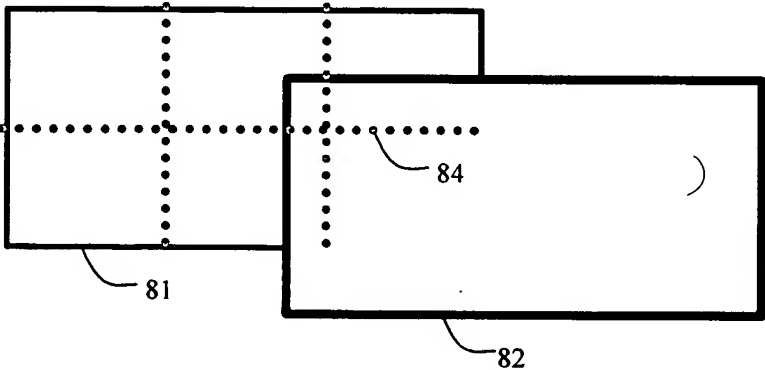
In the case of overlapping regions:



... split lines may appear occluded by the overlapping region:



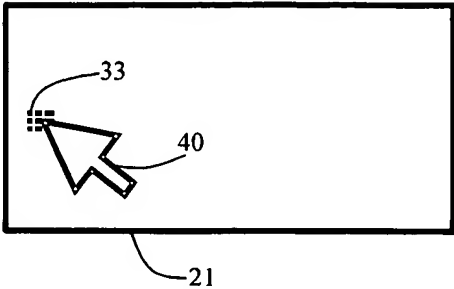
... or they may appear atop all other objects in the display:



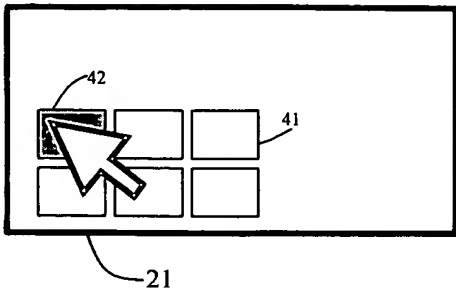
Legend	
81	Occluded region
82	Occluding region
83	Underlaid crop lines
34	Overlaid crop lines

FIGURE 17: IMAGE SEGMENTATION WITH CELL OVERLAY

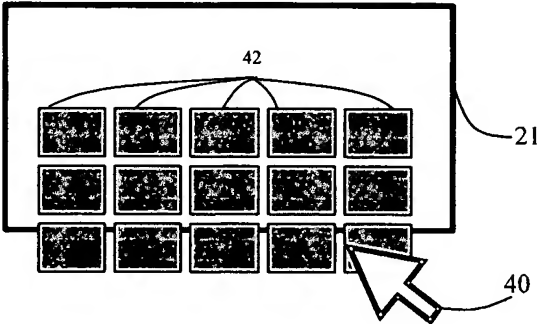
Step 0: the user brings the cursor 40 over the split handle 33 in the region 21



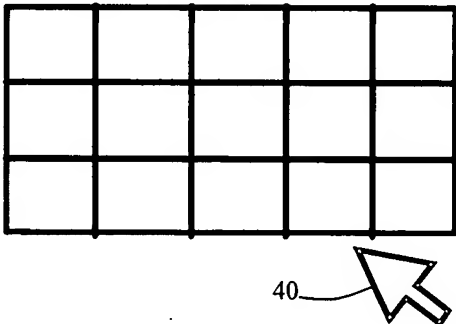
Step 1: the user presses the left mouse button



Step 2: the user drags the mouse while holding the button down



Step 3: the user releases the mouse button



Legend	
21	Region
33	Split Handle
40	Cursor
41	Temporary Cell Overlay
42	Highlighted Cell